

Vascular alien flora, Chile

Eduardo Ugarte*, Francisco Lira, Nicol Fuentes and Stefan Klotz

Universidad de Concepción. Departamento de Botánica. Laboratorio de Ecología Vegetal. Casilla 160-C, Concepción, Chile

* Corresponding author. Email: edugar@udec.cl

ABSTRACT: We compiled a list of 737 alien plant species growing in continental Chile. Most names were obtained from herbarium specimens (mainly herbarium CONC at Universidad de Concepción, Chile). More than fifty percent of the species are european in origin. Besides, records also include: traits related to life-cycle and brief coments on origin and history of introduction.

INTRODUCTION

One of the most striking consequences of globalization is the increase in the problem of alien introduced species. At local and regional extents there is evidence that species richness has increased for many taxonomic groups through the addition of new species (Sax and Gaines 2003). Naturalized and dispersed species add significantly to a country's total biodiversity as well (Pyšek 1998a; Richardson *et al.* 2000; Kühn *et al.* 2004a).

European colonization in SouthAmerica has been associated to serious landscape modifications after a first (and more important) wave of introductions of European plants in Chile (Mathei 1995, Arroyo *et al.* 2000). A second, more recent wave of arrivals derive from new agricultural techniques and to forestry during the late 20th century (Fuentes *et al.* 2007).

We present here an updated list of the alien plant species reported until now for Chile.

MATERIALS AND METHODS

Information was gathered mainly from herbaria specimens (mainly CONC and SGO). Main bibliographical sources were Marticorena and Quezada (1985) and Mathei (1995). Records include, besides name and origin, information on life cycle and growth-form after nomenclature in Biolflor database (Kühn *et al.* 2004b; see <http://www.biolflor.de> for further information). The floristic survey included naturalized alien species (establishing sustainable populations, Richardson *et al.* 2000) as well as casuals (no self-replacing populations, relying on repeated human induced introduction, Richardson *et al.*, 2000) being frequently introduced (repeated introductions every year). We also incorporated species whose origin is labelled just as "South American" even though it is impossible to be certain if they were introduced before the arrival of Spanish conquerors. This

database was implemented within the framework of ALARM project (Settele *et al.* 2005).

RESULTS AND DISCUSSION

In Table 1 we list the 737 alien plant species already recorded for Chile. 156 of them are reported as widely distributed in South America. It is in fact impossible to establish if those species labeled as "South American" arrived into Chilean territory carried *via* human migrations before spanish colonization. The same is valid for the 40 species whose origin is reported as "American" (Table 2). More than a half of the total are european and the best represented genera are *Bromus* (Poaceae) and *Trifolium* (Fabaceae), each one with 15 species. Close to 85% have been reported as weeds at least once, involving a broad range of impacts in agriculture or the environment.

As shown in Table 3, more than 50% of the species belong to the families *Poaceae*, *Asteraceae*, *Fabaceae*, and *Brassicaceae*. These families have been recognized as the most common within alien floras of the world (Pyšek 1998b). Also, *annual* and *perennial* were the most frequent life-cycles (332 and 324 species respectively, Table 4), while herbs (672 species), and shrubs (41 species), were the best represented life-forms (Table 5).

The alien flora represents roughly 14% of the total Chilean flora (Arroyo *et al.* 2000). First inventories date from the nineteenth century, 400 years after the arrival of spanish conquerors. Agricultural practices and associated dramatic landscape changes prompted dispersión and naturalization; in fact, at present most of the species are agricultural weeds. Many of them build large populations taking advantage of man-made habitats such as road-borders, railroads and cities. (Fuentes *et al.* 2004; Lira *et al.* 2008).

TABLE 1. List of alien flora in Chile.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Abutilon grandiflorum</i> G. Don	Malvaceae	Africa-Eurasia	1996
<i>Acacia aroma</i> Gillies ex Hook.	Mimosaceae	South America	1955
<i>Acacia dealbata</i> Link	Mimosaceae	Australia	1881
<i>Acacia horrida</i> Willd	Mimosaceae	Africa	1950
<i>Acacia macracantha</i> Willd	Mimosaceae	South America	1955
<i>Acacia melanoxylon</i> R.Br.	Mimosaceae	Australia	1923
<i>Acacia visco</i> Lorentz.	Mimosaceae	South America	1956
<i>Acaena argentea</i> Ruiz and Pav.	Rosaceae	South America	1847
<i>Acaena pinnatifida</i> Ruiz et Pav.	Rosaceae	South America	1847
<i>Achillea millefolium</i> L.	Asteraceae	Europe	1875
<i>Acmella glaberrima</i> (Hassl.) R.K.Jansen	Asteraceae	South America	1985
<i>Adiantum capillus-veneris</i> L	Adiantaceae	Europe	1861
<i>Ageratum conyzoides</i> L.	Asteraceae	Central America	1921
<i>Agropyron cristatum</i> (L.) Gaertner	Poaceae	Eurasia	1988
<i>Agrostemma githago</i> L.	Caryophyllaceae	Europe	1881
<i>Agrostis capillaris</i> L.	Poaceae	Eurasia	1914
<i>Agrostis castellana</i> Boiss. and Reuter.	Poaceae	Europe	1924
<i>Agrostis gigantea</i> Roth	Poaceae	Eurasia	1930
<i>Agrostis scabra</i> Willd.	Poaceae	North America	1919
<i>Agrostis stolonifera</i> L.	Poaceae	Europe	1937
<i>Ailanthus altissima</i> (Mill.) Swingle	Simaroubaceae	East of Asia	1913
<i>Aira caryophyllea</i> L.	Poaceae	Europe	1854
<i>Aira elegantissima</i> Schur.	Poaceae	Europe	1939
<i>Aira praecox</i> L.	Poaceae	Europe	1884
<i>Alisma lanceolatum</i> With.	Alismataceae	Europe	1928
<i>Alisma plantago-aquatica</i> L.	Alismataceae	Europe	1920
<i>Allium vineale</i> L.	Liliaceae	Europe	1968
<i>Alnus glutinosa</i> (L.) Gaertn.	Betulaceae	Europe	1930
<i>Alopecurus geniculatus</i> L.	Poaceae	Eurasia	1951
<i>Alopecurus pratensis</i> L.	Poaceae	Eurasia	1958
<i>Alyssum alyssoides</i> (L.) L.	Brassicaceae	Europe	1984
<i>Amaranthus albus</i> L.	Amaranthaceae	North America	1887
<i>Amaranthus cruentus</i> L.	Amaranthaceae	South America	1942
<i>Amaranthus deflexus</i> L.	Amaranthaceae	South America	1849
<i>Amaranthus emarginatus</i> Moq. ex Uline and Bray	Amaranthaceae	Central America	1991
<i>Amaranthus hybridus</i> L.	Amaranthaceae	North America	1849
<i>Amaranthus retroflexus</i> L.	Amaranthaceae	North America	1849
<i>Amaranthus viridis</i> L.	Amaranthaceae	Cosmopolite	1849
<i>Ambrosia arborescens</i> Miller.	Asteraceae	South America	1987
<i>Ambrosia artemisiifolia</i> L.	Asteraceae	Central America	1959
<i>Ambrosia peruviana</i> Willd.	Asteraceae	South America	1950
<i>Ambrosia tenuifolia</i> Spreng.	Asteraceae	America	1923
<i>Ammannia coccinea</i> Rottb.	Lythraceae	South America	1983
<i>Ammannia latifolia</i> L.	Lythraceae	America	1991
<i>Ammi majus</i> L	Apiaceae	Europe	1976
<i>Ammi visnaga</i> L.	Apiaceae	Europe	1848
<i>Ammophila arenaria</i> (L.) Link.	Poaceae	Africa-Eurasia	1952

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Anagallis arvensis</i> L.	Primulaceae	Europe	1849
<i>Anemone decapetala</i> Ard,	Ranunculaceae	South America	1845
<i>Anemone multifida</i> Poir.	Ranunculaceae	America	1845
<i>Anoda cristata</i> (L.) Schltdl.	Malvaceae	America	1846
<i>Anthemis arvensis</i> L.	Asteraceae	Europe	1904
<i>Anthemis cotula</i> L.	Asteraceae	Europe	1848
<i>Anthoxanthum odoratum</i> L.	Poaceae	Europe	1875
<i>Anthriscus caucalis</i> Bieb.	Apiaceae	Europe	1899
<i>Anthriscus sylvestris</i> (L.) Hoffm.	Apiaceae	Eurasia	1973
<i>Apera interrupta</i> (L.) Beauv.	Poaceae	Europe	1947
<i>Aphanes arvensis</i> L.	Rosaceae	Europe	1847
<i>Apium graveolens</i> L.	Apiaceae	Europe	1929
<i>Apium nodiflorum</i> (L.) Lag.	Apiaceae	Europe	1899
<i>Aquilegia vulgaris</i> L.	Ranunculaceae	Europe	1931
<i>Arctium minus</i> Bernh.	Asteraceae	Europe	1929
<i>Arctotheca calendula</i> (L.) Levyns.	Asteraceae	Africa	1940
<i>Arrhenaterum elatius</i> (L.) J.andC.Presl.	Poaceae	Europe	1921
<i>Artemisia absinthium</i> L.	Asteraceae	Europe	1848
<i>Arundo donax</i> L.	Poaceae	Asia	1948
<i>Asclepias curassavica</i> L.	Asclepiadeaceae	America	1930
<i>Asperugo procumbens</i> L.	Boraginaceae	Europe	1988
<i>Asphodelus fistulosus</i> L.	Liliaceae	Europe	1987
<i>Aster squamatus</i> (Spreng) Hier.	Asteraceae	South America	1848
<i>Atriplex hortensis</i> L.	Chenopodiaceae	Europe	1884
<i>Atriplex nummularia</i> Lindl.	Chenopodiaceae	Australia	1982
<i>Atriplex patula</i> L.	Chenopodiaceae	Europe	1967
<i>Atriplex prostrata</i> Bouch. ex DC.	Chenopodiaceae	Europe	1881
<i>Atriplex rosea</i> L.	Chenopodiaceae	Australia	1983
<i>Atriplex semibaccata</i> R. Br.	Chenopodiaceae	Australia	1927
<i>Atriplex suberecta</i> Verd.	Chenopodiaceae	Africa	1982
<i>Atriplex tatarica</i> L.	Chenopodiaceae	Eurasia	1954
<i>Avena barbata</i> Pott ex Link	Poaceae	Europe	1854
<i>Avena fatua</i> L.	Poaceae	Europe	1937
<i>Avena sativa</i> L.	Poaceae	Europe	1932
<i>Avena sterilis</i> L.	Poaceae	Europe	1958
<i>Avena strigosa</i> Schreb.	Poaceae	Europe	1927
<i>Azolla filiculoides</i> Lam.	Azollaceae	America	1854
<i>Baccharis pingraea</i> DC	Asteraceae	South America	1848
<i>Barbarea verna</i> (Mill.) Aschers.	Brassicaceae	Europe	1928
<i>Bartsia trixago</i> L.	Scrophulariaceae	Europe	1949
<i>Bassia hyssopifolia</i> (Pall.) Kuntze	Chenopodiaceae	Europe	1954
<i>Bellis perennis</i> L.	Asteraceae	Europe	1881
<i>Beta vulgaris</i> L.	Chenopodiaceae	Europe	1849
<i>Bidens aurea</i> (Aiton)Sherff.	Asteraceae	North America	1941
<i>Bidens laevis</i> L.	Asteraceae	North America	1848
<i>Bidens pilosa</i> L.	Asteraceae	Central America	1848
<i>Bidens pseudocosmos</i> Sherff.	Asteraceae	South America	1978

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Bidens subalternans</i> DC	Asteraceae	South America	1978
<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Central America	1891
<i>Borago officinalis</i> L.	Boraginaceae	Europe	1849
<i>Bothriochloa laguroides</i> (DC.) Herter.	Poaceae	America	1923
<i>Bothriochloa saccharoides</i> (Sw.) Rydb	Poaceae	America	1930
<i>Brachypodium distachyon</i> (L.) Beauv.	Poaceae	Europe	1975
<i>Brassica napus</i> L.	Brassicaceae	Europe	1846
<i>Brassica nigra</i> (L.) Koch.	Brassicaceae	Europe	1846
<i>Brassica oleracea</i> L.	Brassicaceae	Europe	1931
<i>Brassica rapa</i> L.	Brassicaceae	Europe	1846
<i>Briza maxima</i> L.	Poaceae	Europe	1881
<i>Briza minor</i> L.	Poaceae	Europe	1875
<i>Bromidium anomalum</i> (Trin.) Doell.	Poaceae	South America	1846
<i>Bromus berterianus</i> Colla.	Poaceae	South America	1854
<i>Bromus catharticus</i> Vahl.	Poaceae	South America	1854
<i>Bromus diandrus</i> Roth.	Poaceae	Europe	1919
<i>Bromus erectus</i> Huds.	Poaceae	Europa-Africa	1927
<i>Bromus hordeaceus</i> L.	Poaceae	Europe	1922
<i>Bromus lanceolatus</i> Roth.	Poaceae	Europe	1830
<i>Bromus madritensis</i> L.	Poaceae	Europe	1875
<i>Bromus racemosus</i> L.	Poaceae	Europe	1947
<i>Bromus rigidus</i> Roth.	Poaceae	Europe	1923
<i>Bromus scoparius</i> L.	Poaceae	Europe	1875
<i>Bromus secalinus</i> L.	Poaceae	Europe	1904
<i>Bromus squarrosus</i> L.	Poaceae	Europe	1986
<i>Bromus stamineus</i> Desv.	Poaceae	South America	1854
<i>Bromus sterilis</i> L.	Poaceae	Europe	1924
<i>Bromus tectorum</i> L.	Poaceae	Europe	1848
<i>Caesalpinia gilliesii</i> (Hook.) Benth.	Fabaceae	South America	1950
<i>Calceolaria tripartita</i> Ruiz and Pav.	Scrophulariaceae	Central America	1917
<i>Calendula arvensis</i> L.	Asteraceae	Europe	1910
<i>Calendula officinalis</i> L.	Asteraceae	Europe	1848
<i>Calendula tripterocarpa</i> Rupr.	Asteraceae	Europe	1960
<i>Callitriche terrestris</i> Raf.	Callitrichaceae	America	1887
<i>Calyptocarpus vialis</i> Less.	Asteraceae	Central America	1991
<i>Calystegia sepium</i> (L.) R.Br	Convolvulaceae	Cosmopolite	1849
<i>Camellina alisum</i> (Miller) Thell.	Brassicaceae	Europe	2001
<i>Capsella bursa-pastoris</i> (L.)Medik.	Brassicaceae	Europe	1846
<i>Cardamine hirsuta</i> L.	Brassicaceae	Europe	1846
<i>Cardaria draba</i> (L.) Desv.	Brassicaceae	Europe	1937
<i>Carduus nutans</i> L.	Asteraceae	Europe	1960
<i>Carduus pycnocephalus</i> L.	Asteraceae	Europe	1928
<i>Carduus thoermeri</i> Weinm.	Asteraceae	Eurasia	2000
<i>Carex brongniartii</i> Kunth	Cyperaceae	South America	1854
<i>Carex pseudocyperus</i> L.	Cyperaceae	South America	1854
<i>Carthamus lanatus</i> L.	Asteraceae	Europe	1919
<i>Carthamus tinctorius</i> L.	Asteraceae	Mediterranean basin	1936

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Catabrosa aquatica</i> (L.) P. Beauv.	Poaceae	Circumpolar	1980
<i>Catapodium rigidum</i> (L.) C.E. Hubb.	Poaceae	Europe	1925
<i>Cenchrus echinatus</i> L.	Poaceae	Central America	1917
<i>Cenchrus incertus</i> Curtis.	Poaceae	Central America	1939
<i>Cenchrus myosuroides</i> Kunth.	Poaceae	Central America	1925
<i>Centaurea calcitrapa</i> L.	Asteraceae	Europe	1925
<i>Centaurea jacea</i> L.	Asteraceae	Europe	1884
<i>Centaurea melitensis</i> L.	Asteraceae	Europe	1848
<i>Centaurea nigra</i> L.	Asteraceae	Europe	1984
<i>Centaurea solstitialis</i> L.	Asteraceae	Europe	1956
<i>Centaurium littorale</i> (Turner ex Sm.) Gilmour.	Gentianaceae	Europe	1986
<i>Centaurium pulchellum</i> (Swartz) Druce	Asteraceae	Europe	1898
<i>Cerastium arvense</i> L.	Caryophyllaceae	Europe	1846
<i>Cerastium fontanum</i> Baumg.	Caryophyllaceae	Europe	1854
<i>Cerastium glomeratum</i> Thuill.	Caryophyllaceae	Europe	1846
<i>Cestrum parqui</i> L'Hér.	Solanaceae	South America	1849
<i>Chaetotropis chilensis</i> Kunth.	Poaceae	South America	1854
<i>Chamaemelum mixtum</i> (L.) All.	Asteraceae	Europe	1920
<i>Chamomilla recutita</i> (L.) Raus.	Asteraceae	Europe	1881
<i>Chamomilla suaveolens</i> (Pursh) Rydb.	Asteraceae	North America	1903
<i>Chenopodium album</i> L.	Chenopodiaceae	Europe	1849
<i>Chenopodium ambrosioides</i> L.	Chenopodiaceae	America	1849
<i>Chenopodium antarcticum</i> (Hook. f.) Benth. et Hook.	Chenopodiaceae	South America	1849
<i>Chenopodium carnosulum</i> Moq.	Chenopodiaceae	America	1895
<i>Chenopodium ficifolium</i> Sm.	Chenopodiaceae	Europe	1849
<i>Chenopodium glaucum</i> L.	Chenopodiaceae	Eurasia	1974
<i>Chenopodium hircinum</i> Schrad.	Chenopodiaceae	South America	1849
<i>Chenopodium multifidum</i> L.	Chenopodiaceae	South America	1895
<i>Chenopodium murale</i> L.	Chenopodiaceae	Asia Minor	1849
<i>Chenopodium vulvaria</i> L.	Chenopodiaceae	Eurasia	1925
<i>Chiliotrichum diffusum</i> (Forst.f.) Kuntze	Asteraceae	South America	1848
<i>Chiliotrichum rosmarinifolium</i> Less	Asteraceae	South America	1848
<i>Chloris gayana</i> Kunth.	Poaceae	Africa	1951
<i>Chloris radiata</i> (L.) Sw.	Poaceae	Central America	1930
<i>Chloris virgata</i> Sw.	Poaceae	Central America	1955
<i>Chrysanthemoides moniliferum</i> (L.) T.Nord.	Asteraceae	Africa	1932
<i>Chrysanthemum coronarium</i> L.	Asteraceae	Europe	1881
<i>Chrysanthemum segetum</i> L.	Asteraceae	Europe	1904
<i>Cichorium intybus</i> L.	Asteraceae	Europe	1848
<i>Cirsium arvense</i> (L.) Scop.	Asteraceae	Europe	1937
<i>Cirsium vulgare</i> (Savi) Ten	Asteraceae	Europe	1875
<i>Clematis bonariensis</i> Juss. ex DC.	Ranunculaceae	South America	1966
<i>Clematis montevidensis</i> Spreng.	Ranunculaceae	South America	1956
<i>Cnicus benedictus</i> L.	Asteraceae	Europe	1848
<i>Coleostephus myconis</i> (L.) Reich.	Asteraceae	Europe	1937
<i>Conium maculatum</i> L.	Apiaceae	Europe	1848
<i>Convolvulus arvensis</i> L.	Convolvulaceae	Europe	1848

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Conyza bonariensis</i> (L.) Cronq.	Asteraceae	South America	1848
<i>Conyza floribunda</i> Kunth.	Asteraceae	South America	1848
<i>Coriaria ruscifolia</i> L.	Coriariaceae	South America	1846
<i>Coronopus didymus</i> (L.) Smith.	Brassicaceae	America	1846
<i>Cotula australis</i> (Sieb.) Hook.	Asteraceae	New Zeland	1903
<i>Cotula coronopifolia</i> L.	Asteraceae	Africa	1857
<i>Crepis capillaris</i> (L.) Wallr.	Asteraceae	Europe	1881
<i>Crepis pulchra</i> L.	Asteraceae	Europe	1990
<i>Crepis setosa</i> Hall.	Asteraceae	Europe	1921
<i>Crepis vesicaria</i> L.	Asteraceae	Europe	1951
<i>Crocosmia x crocosmiiflora</i>	Iridaceae	Africa	1929
<i>Crotalaria grahamiana</i> Wight and Arn.	Fabaceae	India	1982
<i>Crotalaria incana</i> L.	Fabaceae	Tropical America-Africa	1955
<i>Crotalaria pallida</i> Aiton.	Fabaceae	Africa	1913
<i>Cyclospermum leptophyllum</i> (Pers.) Sprag.	Apiaceae	South America	1848
<i>Cymbalaria muralis</i> P.G. Gaertn., B. Mey. and Scherb.	Scrophulariaceae	Europe	1881
<i>Cymbopogon citratus</i> Stapf.	Poaceae	India	1963
<i>Cynara cardunculus</i> L.	Asteraceae	Europe	1848
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Africa	1854
<i>Cynoglossum creticum</i> Miller.	Boraginaceae	Europe	1907
<i>Cynoglossum limense</i> Willd.	Boraginaceae	South America	1929
<i>Cynoglossum zeylanicum</i> Brand.	Boraginaceae	India	1941
<i>Cynosurus cristatus</i> L.	Poaceae	Eurasia	1924
<i>Cynosurus echinatus</i> L.	Poaceae	Europe	1881
<i>Cyperus alternifolius</i> L.	Cyperaceae	Madagascar	1956
<i>Cyperus articulatus</i> L.	Cyperaceae	Cosmopolite	1854
<i>Cyperus difformis</i> L.	Cyperaceae	Europe	1983
<i>Cyperus eragrostis</i> Lam.	Cyperaceae	Central America	1854
<i>Cyperus laetus</i> Kunth.	Cyperaceae	South America	1854
<i>Cyperus laevigatus</i> L.	Cyperaceae	Europe	1926
<i>Cyperus rotundus</i> L.	Cyperaceae	Asia	1929
<i>Cyperus squarrosus</i> L.	Cyperaceae	Madagascar	1925
<i>Cytisus scoparius</i> (L.) Link.	Fabaceae	Europe	1847
<i>Cytisus striatus</i> (Hill) Rothm.	Fabaceae	Europe	1897
<i>Dactylis glomerata</i> L.	Poaceae	Europe	1910
<i>Datura ferox</i> L.	Solanaceae	East of Asia	1981
<i>Datura inoxia</i> Miller.	Solanaceae	North America	1988
<i>Datura stramonium</i> L.	Solanaceae	North America	1849
<i>Daucus carota</i> L.	Apiaceae	Europe	1848
<i>Daucus pusillus</i> Michx.	Apiaceae	America?	1916
<i>Deschampsia berteroana</i> (Kunth) Trin.	Poaceae	South America	1854
<i>Deschampsia setacea</i> (Huds.) Hack.	Poaceae	Europe	1930
<i>Descurainia sophia</i> (L.) Webb.	Brassicaceae	Europe	1846
<i>Descurainia stricta</i> (Phil.) Prantl ex Reiche	Brassicaceae	America	1860
<i>Dianthus armeria</i> L.	Caryophyllaceae	Europe	1968
<i>Dichondra sericea</i> Swartz	Convolvulaceae	America	1849
<i>Digitalis purpurea</i> L.	Scrophulariaceae	Europe	1875

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Digitaria aequiglumis</i> (Hackel and Arech.) Parodi	Poaceae	South America	1896
<i>Digitaria ciliaris</i> (Retz.) Koeler.	Poaceae	Asia (Pantropical?)	1913
<i>Digitaria ischaemum</i> (Schreber) Muhl.	Poaceae	Europe	1974
<i>Digitaria sanguinalis</i> (L.) Scop.	Poaceae	Central America	1873
<i>Digitaria setigera</i> Roth ex Roem. et Schult.	Poaceae	Tropical Asia	1921
<i>Digitaria violascens</i> Link.	Poaceae	Central America	1991
<i>Diplachne uninervia</i> (C.Presl) Parodi	Poaceae	America	1854
<i>Diplotaxis muralis</i> (L.) DC.	Brassicaceae	Europe	1937
<i>Dipsacus sativus</i> (L.) Honck.	Dipsacaceae	Europe	1848
<i>Distichlis spicata</i> (L.) Greene.	Poaceae	America	1854
<i>Dolichos lignosus</i> L.	Fabaceae	Africa	1955
<i>Draba verna</i> L.	Brassicaceae	Europe	1901
<i>Duchesnea indica</i> (Andr.) Focke	Rosaceae	Asia	1919
<i>Echinochloa colona</i> (L.) Link	Poaceae	Central America	1896
<i>Echinochloa crus-galli</i> (L.) Beauv.	Poaceae	Central America	1854
<i>Echinochloa crus-pavonis</i> (H.B.K.) Schult	Poaceae	Central America	1854
<i>Echium plantagineum</i> L.	Boraginaceae	Europe	1935
<i>Echium vulgare</i> L.	Boraginaceae	Europe	1907
<i>Eclipta prostrata</i> (L.) L.	Asteraceae	Cosmopolite	1848
<i>Egeria densa</i> Planch.	Hydrocharitaceae	South America	1956
<i>Eichornia crassipes</i> (Mart.) Solms.	Pontederiaceae	Central America	1917
<i>Eleocharis acicularis</i> (L.) Roemer and Schultes.	Cyperaceae	Cosmopolite	1985
<i>Eleocharis nodulosa</i> (Roth) Schult.	Cyperaceae	South America	1901
<i>Eleocharis palustris</i> (L.) Roemer and Schultes	Cyperaceae	South America	1854
<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Central America	1921
<i>Eleusine tristachya</i> (Lam.) Lam.	Poaceae	South America	1923
<i>Elodea potamogeton</i> (Bert.) Esp.	Hydrocharitaceae	South America	1852
<i>Elytrigia repens</i> L.	Poaceae	Eurasia	1854
<i>Emex spinosa</i> (L.) Campd.	Plantaginaceae	Mediterranean basin	1998
<i>Epilobium obscurum</i> Schreb.	Onagraceae	Europe	1954
<i>Epilobium tetragonum</i> L.	Onagraceae	Europe	1942
<i>Equisetum bogotense</i> Kunth.	Equisetaceae	America	1854
<i>Eragrostis curvula</i> (Schrader) Nees.	Poaceae	Africa	1961
<i>Eragrostis pilosa</i> (L.) P. Beauv.	Poaceae	Africa	1923
<i>Eragrostis virescens</i> Presl.	Poaceae	South America	1854
<i>Eremocarpus setigerus</i> (Hook.) Benth.	Euphorbiaceae	North America	1980
<i>Erigeron karwinskianus</i> DC.	Asteraceae	Central America	1934
<i>Eriochloa montevidensis</i> Griseb.	Poaceae	South America	1950
<i>Erodium botrys</i> (Cav.) Bertol.	Geraniaceae	Europe	1846
<i>Erodium cicutarium</i> (L.) L'Hér	Geraniaceae	Europe	1846
<i>Erodium geoides</i> A.St.-Hil.	Geraniaceae	Africa	1930
<i>Erodium malacoides</i> (L.) L'Her.	Geraniaceae	Europe	1846
<i>Erodium moschatum</i> (L.) L'Hér.	Geraniaceae	Europe	1846
<i>Eruca vesicaria</i> (L.) Cav.	Brassicaceae	Europe	1971
<i>Eryngium rostratum</i> Cav.	Apiaceae	South America	1848
<i>Eschscholtzia californica</i> Cham.	Papaveraceae	North America	1881
<i>Euphorbia cyathophora</i> Murr.	Euphorbiaceae	America	1991

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Euphorbia falcata</i> L.	Euphorbiaceae	Europe	1944
<i>Euphorbia helioscopia</i> L.	Euphorbiaceae	Europe	1938
<i>Euphorbia hirta</i> L.	Euphorbiaceae	Central America	1946
<i>Euphorbia hypericifolia</i> L.	Euphorbiaceae	America	1990
<i>Euphorbia lathyris</i> L.	Euphorbiaceae	Europe	1818
<i>Euphorbia maculata</i> L.	Euphorbiaceae	Central America	1987
<i>Euphorbia ovalifolia</i> (Klotz and Garcke) Boissier.	Euphorbiaceae	South America	1944
<i>Euphorbia peplus</i> L.	Euphorbiaceae	Europe	1916
<i>Euphorbia platyphyllos</i> L.	Euphorbiaceae	Europe	1934
<i>Euphorbia serpens</i> Kunth.	Euphorbiaceae	America	1944
<i>Fallopia convolvulus</i> (L.) A. Löve.	Polygonaceae	Europe	1932
<i>Festuca arundinacea</i> Schreber.	Poaceae	Europe	1904
<i>Festuca juncifolia</i> St.-Amans.	Poaceae	Europe	1970
<i>Festuca rubra</i> L.	Poaceae	Cosmopolite	1967
<i>Filago gallica</i> L.	Asteraceae	Europe	1848
<i>Flaveria bidentis</i> (L.) Kuntze	Asteraceae	South America	1848
<i>Foeniculum vulgare</i> Miller.	Apiaceae	Europe	1848
<i>Fumaria agraria</i> Lag.	Fumariaceae	Europe	1845
<i>Fumaria capreolata</i> L.	Fumariaceae	Europe	1839
<i>Fumaria parviflora</i> Lam.	Fumariaceae	Europe	1869
<i>Galega officinalis</i> L.	Fabaceae	Europe	1881
<i>Galenia pubescens</i> (Eckl. and Zeyh.) Druce.	Aizoaceae	Africa	2001
<i>Galeopsis tetrahit</i> L.	Lamiaceae	Europe	1990
<i>Galinsoga parviflora</i> Cav.	Asteraceae	South America	1848
<i>Galium aparine</i> L.	Rubiaceae	Europe	1848
<i>Galium murale</i> (L.) All.	Rubiaceae	Europe	1914
<i>Galium tricornutum</i> Dandy.	Rubiaceae	Europe	1959
<i>Gamochaeta spicata</i> (Lam.) Cabrera	Asteraceae	South America	1848
<i>Gamochaeta stachydifolia</i> (Lam.) Cabrera	Asteraceae	South America	1896
<i>Gastridium phleoides</i> (Nees and B.Mey.) C.E.Hubb.	Poaceae	Europe	1854
<i>Geranium dissectum</i> L.	Geraniaceae	Europe	1846
<i>Geranium molle</i> L.	Geraniaceae	Europe	1896
<i>Geranium purpureum</i> Vill.	Geraniaceae	Europe	1925
<i>Geranium pusillum</i> Burm.	Geraniaceae	Eurasia	1996
<i>Geranium robertianum</i> L.	Geraniaceae	Europe	1846
<i>Glechoma hederacea</i> L.	Lamiaceae	Europe	1931
<i>Glyceria fluitans</i> (L.) R. Br	Poaceae	Eurasia	1943
<i>Gossypium barbadense</i> L.	Malvaceae	America	1931
<i>Hainardia cylindrica</i> (Willd.) Greuter.	Poaceae	Europe	1955
<i>Hedypnois cretica</i> (L.) Dum.-Courset.	Asteraceae	Europe	1903
<i>Helianthus tuberosus</i> L.	Asteraceae	North America	1848
<i>Heliotropium curassavicum</i> L.	Boraginaceae	America	1849
<i>Herniaria cinerea</i> DC.	Caryophyllaceae	Europe	1944
<i>Hesperis matronalis</i> L.	Brassicaceae	Europe	1881
<i>Hibiscus trionum</i> L.	Malvaceae	Europe	1846
<i>Hieracium aurantiacum</i> L.	Asteraceae	Europe	1967
<i>Hieracium pilosella</i> L.	Asteraceae	Europe	1951

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Hieracium praealtum</i> Vill. ex Gochnat	Asteraceae	Europe	1988
<i>Hirschfeldia incana</i> (L.)Lagreze-Fossat.	Brassicaceae	Europe	1963
<i>Holcus lanatus</i> L.	Poaceae	Europe	1875
<i>Hordeum hystrix</i> Roth.	Poaceae	Europe	1950
<i>Hordeum jubatum</i> L.	Poaceae	North America	1955
<i>Hordeum marinum</i> Huds.	Poaceae	Europe	1985
<i>Hordeum murinum</i> L.	Poaceae	Europe	1854
<i>Hordeum secalinum</i> L.	Poaceae	Europe	1854
<i>Hydrocleys nymphoides</i> (Humb. and Bonpl. ex Willd.) Buchenau.	Butomaceae	South America	1951
<i>Hydrocotyle bonariensis</i> Lam	Apiaceae	Central America	1848
<i>Hypericum androsaemum</i> L.	Hypericaceae	Europe	1881
<i>Hypericum perforatum</i> L	Hypericaceae	Europe	1896
<i>Hypericum x inodorum</i>	Hypericaceae	Europe	1919
<i>Hypochaeris affglabra</i> L.	Asteraceae	Europe	1905
<i>Hypochaeris radicata</i> L.	Asteraceae	Europe	1905
<i>Imperata condensata</i> Steud.	Poaceae	South America	1854
<i>Indigofera truxillensis</i> Kunth.	Fabaceae	South America	1930
<i>Ipomoea purpurea</i> (L.) Roth.	Convolvulaceae	America	1849
<i>Iris pseudacorus</i> L.	Iridaceae	Eurasia	1995
<i>Isatis tinctoria</i> L.	Brassicaceae	Europe	1846
<i>Juncus bufonius</i> L.	Juncaceae	Cosmopolite	1854
<i>Juncus effusus</i> L.	Juncaceae	Cosmopolite	1915
<i>Juncus imbricatus</i> Laharpe.	Juncaceae	South America	1854
<i>Juncus procerus</i> E. Mey	Juncaceae	South America	1854
<i>Kickxia elatine</i> (L.) Dumort	Scrophulariaceae	Europe	1971
<i>Knautia integrifolia</i> (L.) Bertol.	Dipsacaceae	Europe	1987
<i>Lactuca saligna</i> L.	Asteraceae	Europe	1960
<i>Lactuca sativa</i> L.	Asteraceae	Europe	1955
<i>Lactuca serriola</i> L.	Asteraceae	Europe	1905
<i>Lactuca virosa</i> L.	Asteraceae	Europe	1933
<i>Lagurus ovatus</i> L.	Poaceae	Europe	1881
<i>Lamarckia aurea</i> (L.) Moench	Poaceae	Europe	1881
<i>Lamium amplexicaule</i> L.	Lamiaceae	Europe	1908
<i>Lapsana communis</i> L.	Asteraceae	Eurasia	1905
<i>Lathyrus magellanicus</i> Lam.	Fabaceae	South America	1847
<i>Lathyrus sativus</i> L.	Fabaceae	Eurasia	1946
<i>Leontodon autumnalis</i> L.	Asteraceae	Europe	1951
<i>Leontodon hirtus</i> L.	Asteraceae	Europe	1976
<i>Leontodon saxatilis</i> Lam.	Asteraceae	Europe	1935
<i>Lepidium bonariense</i> L.	Brassicaceae	South America	1846
<i>Lepidium pseudo-didymus</i> Thell.	Brassicaceae	South America	1845
<i>Leucanthemum vulgare</i> Lam.	Asteraceae	Europe	1875
<i>Levisticum officinale</i> (L) Koch.	Apiaceae	Europe	1881
<i>Leymus arenarius</i> (L.) Hochst.	Poaceae	Europe	1952
<i>Limnobium laevigatum</i> (Humb. and Bonpl. ex Willd.) Heine	Hydrocharitaceae	South America	1954
<i>Linaria texana</i> Scheele.	Scrophulariaceae	Europe	1875
<i>Linaria vulgaris</i> L.	Scrophulariaceae	Europe	1875

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Lindernia anagallidea</i> (Michx.) Pennell	Scrophulariaceae	America	1911
<i>Linum bienne</i> Miller.	Linaceae	Europe	1917
<i>Linum catharticum</i> L.	Linaceae	Eurasia	1952
<i>Linum usitatissimum</i> L.	Linaceae	Europe	1846
<i>Lobularia maritima</i> (L.) Desv.	Brassicaceae	Europe	1846
<i>Lolium multiflorum</i> Lam.	Poaceae	Europe	1854
<i>Lolium perenne</i> L.	Poaceae	Europe	1854
<i>Lolium rigidum</i> Gaudin	Poaceae	Europe	1924
<i>Lolium temulentum</i> L.	Poaceae	Europe	1854
<i>Lophochloa cristata</i> (L.) Hylander	Poaceae	Europe	1916
<i>Lotus angustissimus</i> L.	Fabaceae	Eurasia	1978
<i>Lotus corniculatus</i> L.	Fabaceae	Europe	1847
<i>Lotus pedunculatus</i> Cav.	Fabaceae	Eurasia	1921
<i>Lotus tenuis</i> Waldst et. Kit	Fabaceae	Europe	1947
<i>Lotus uliginosus</i> Schkuhr	Fabaceae	Europe	1847
<i>Ludwigia peploides</i> (Kunth) P.H. Raven.	Onagraceae	South America	1847
<i>Lupinus albus</i> L.	Fabaceae	Europe	1975
<i>Lupinus angustifolius</i> L.	Fabaceae	Europe	1950
<i>Lupinus arboreus</i> Sims	Fabaceae	North America	1881
<i>Lupinus luteus</i> L.	Fabaceae	Eurasia	2008
<i>Lupinus microcarpus</i> Sims.	Fabaceae	South America	1847
<i>Lychnis coronaria</i> L.	Caryophyllaceae	Europe	1918
<i>Lycopersicon chilense</i> Dunal	Solanaceae	South America	1852
<i>Lycopus europaeus</i> L.	Lamiaceae	Europe	1965
<i>Lythrum hyssopifolia</i> L.	Lythraceae	Europe	1847
<i>Lythrum maritimum</i> Kunth.	Lythraceae	South America	1974
<i>Lythrum salicaria</i> L.	Lythraceae	Eurasia	1930
<i>Macroptilium lathyroides</i> (L.) Urb.	Fabaceae	Central America	1847
<i>Malva assurgentiflora</i> (Kellogg) M. F. Ray	Malvaceae	North America	1948
<i>Malva dendromorpha</i> M.F.Ray	Malvaceae	Europa-Africa	1935
<i>Malva moschata</i> L.	Malvaceae	Europe	1932
<i>Malva neglecta</i> Wallr.	Malvaceae	Europe	1846
<i>Malva nicaeensis</i> All.	Malvaceae	Europe	1846
<i>Malva parviflora</i> L.	Malvaceae	Europe	1846
<i>Malva sylvestris</i> L.	Malvaceae	Europe	1954
<i>Malvastrum coromandelianum</i> (L.) Garcke.	Malvaceae	Central America	1913
<i>Marrubium vulgare</i> L.	Lamiaceae	Europe	1849
<i>Mecardonia procumbens</i> (Mill.) Small	Scrophulariaceae	America	1991
<i>Medicago arabica</i> (L.) Huds.	Fabaceae	Europe	1847
<i>Medicago arborea</i> L.	Fabaceae	Europe	1954
<i>Medicago lupulina</i> L.	Fabaceae	Europe	1847
<i>Medicago minima</i> (L.) L.	Fabaceae	Europe	1847
<i>Medicago polymorpha</i> L.	Fabaceae	Europe	1847
<i>Medicago sativa</i> L.	Fabaceae	Eurasia	1847
<i>Melilotus albus</i> Desr.	Fabaceae	Eurasia	1928
<i>Melilotus indicus</i> (L.) All.	Fabaceae	Europe	1847
<i>Melilotus officinalis</i> L.	Fabaceae	Eurasia	2005

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Melinis repens</i> (Willd.) Zizka	Poaceae	Africa	1990
<i>Melissa officinalis</i> L.	Lamiaceae	Europe	1849
<i>Mentha aquatica</i> L.	Lamiaceae	Europe	1849
<i>Mentha pulegium</i> L.	Lamiaceae	Europe	1849
<i>Mentha suaveolens</i> L.	Lamiaceae	Europe	1916
<i>Mentha x piperita</i>	Lamiaceae	Europe	1849
<i>Mercurialis annua</i> L.	Euphorbiaceae	Eurasia	1931
<i>Mesembryanthemum crystallinum</i> L.	Aizoaceae	Africa	1881
<i>Microchloa indica</i> (L. f.) P. Beauv	Poaceae	Australia	1927
<i>Miscanthus sinensis</i> Anderss.	Poaceae	Asia	1925
<i>Misopates orontium</i> (L.) Rafin.	Scrophulariaceae	Europe	1987
<i>Modiola caroliniana</i> (L.) G. Don.	Malvaceae	Europe	1846
<i>Muhlenbergia asperifolia</i> (Nees and Meyen ex Trin.) Parodi.	Poaceae	America	1854
<i>Myosotis arvensis</i> (L.) Hill.	Boraginaceae	Europe	1934
<i>Myosotis discolor</i> Pers.	Boraginaceae	Europe	1936
<i>Myosotis latifolia</i> Poir.	Boraginaceae	Africa	1933
<i>Myosotis laxa</i> Lehm.	Boraginaceae	North America, Eurasia	1929
<i>Myosotis scorpioides</i> Link.	Boraginaceae	Eurasia	1938
<i>Myosotis stricta</i> Link ex Roem. and Schult.	Boraginaceae	Eurasia	1962
<i>Myriophyllum aquaticum</i> (Velloso) Verdc.	Haloragaceae	South America	1847
<i>Nasturtium officinale</i> R. Br.	Brassicaceae	Europe	1980
<i>Nicandra physalodes</i> (L.) Gaertn.	Solanaceae	South America	1849
<i>Nicotiana acuminata</i> (Graham) Hook.	Solanaceae	South America	1849
<i>Nicotiana glauca</i> Graham.	Solanaceae	South America	1909
<i>Nicotiana sylvestris</i> Speg. and Comes	Solanaceae	South America	1996
<i>Nothoscordum gracile</i> (Dryand. Ex Aiton) Stearn	Liliaceae	South America	1896
<i>Nymphaea alba</i> L.	Fabaceae	Europe	1992
<i>Oenothera rosea</i> L'Hér. ex Ait.	Onagraceae	America	1928
<i>Oenothera stricta</i> Ledeb. ex Link	Onagraceae	South America	1847
<i>Omphalodes linifolia</i> (L.) Moench.	Boraginaceae	Europe	1943
<i>Onopordum acanthium</i> L.	Asteraceae	Europe	1881
<i>Ornithopus compressus</i> L.	Fabaceae	Europe	1950
<i>Ornithopus pinnatus</i> (Miller) Druce.	Fabaceae	Europe	1953
<i>Ornithopus sativus</i> Brot.	Fabaceae	Europe	1930
<i>Orobanche minor</i> Smith	Orobancheaceae	Europe	1952
<i>Orobanche ramosa</i> L.	Orobancheaceae	Europe	1986
<i>Oryza sativa</i> L.	Poaceae	Asia	1933
<i>Ovidia pillopillo</i> (Gay) Meissner.	Thymelaeaceae	South America	1851
<i>Oxalis articulata</i> Savign.	Oxalidaceae	South America	1973
<i>Oxalis corniculata</i> L.	Oxalidaceae	Europe	1846
<i>Oxalis pes-caprae</i> L.	Oxalidaceae	Africa	1916
<i>Panicum capillare</i> L.	Poaceae	North America	1926
<i>Panicum dicotomiflorum</i> Michx.	Poaceae	Central America	1983
<i>Panicum miliaceum</i> L.	Poaceae	Asia	1881
<i>Papaver dubium</i> L.	Papaveraceae	Europe	1998
<i>Papaver hybridum</i> L	Papaveraceae	Europe	1999
<i>Papaver rhoeas</i> L.	Papaveraceae	Europe	1845

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Papaver somniferum</i> L.	Papaveraceae	Europe	1845
<i>Parapholis incurva</i> (L.) Hubb.	Poaceae	Europe	1940
<i>Parapholis strigosa</i> (Dumort.) C.E.Hubb.	Poaceae	Europe	1942
<i>Parentucellia latifolia</i> (L.) Caruel.	Scrophulariaceae	Europe	1982
<i>Parentucellia viscosa</i> (L.) Caruel	Scrophulariaceae	Europe	1959
<i>Parietaria judaica</i> L.	Urticaceae	Europe	1962
<i>Pascaliala glauca</i> Ortega	Asteraceae	South America	1895
<i>Paspalum dasypleurum</i> Kunze ex E. Desv.	Poaceae	South America	1854
<i>Paspalum dilatatum</i> Poir.	Poaceae	South America	1935
<i>Paspalum paspalodes</i> (Michx.) Scribner	Poaceae	Central America	1854
<i>Paspalum urvillei</i> Steud.	Poaceae	South America	1936
<i>Paspalum vaginatum</i> Swartz.	Poaceae	America	1854
<i>Passiflora foetida</i> L.	Passifloraceae	Asia	1930
<i>Pastinaca sativa</i> L.	Apiaceae	Europe	1881
<i>Pennisetum chilense</i> (Desvaux) Jackson ex Fries	Poaceae	South America	1854
<i>Pennisetum clandestinum</i> Hochst. ex Chiov.	Poaceae	Africa	1986
<i>Pennisetum villosum</i> R. Br. ex Fresen.	Poaceae	Africa	1928
<i>Petrorhagia dubia</i> (Raf.) G. López and Romo	Caryophyllaceae	Europe	1934
<i>Petrorhagia prolifera</i> (L.) P.W. Ball and Heywood.	Caryophyllaceae	Europe	1942
<i>Petunia parviflora</i> Juss.	Solanaceae	America	1998
<i>Phalaris aquatica</i> L.	Poaceae	Europe	1926
<i>Phalaris arundinacea</i> L.	Poaceae	Eurasia	1932
<i>Phalaris canariensis</i> L.	Poaceae	Europe	1925
<i>Phalaris caroliniana</i> Walt.	Poaceae	North America	1932
<i>Phalaris minor</i> Retz.	Poaceae	Eurasia	1925
<i>Phleum pratense</i> L.	Poaceae	Eurasia	1920
<i>Phragmites australis</i> (Cav.) Trin.	Poaceae	Cosmopolite	1854
<i>Phyla canescens</i> (Kunth) Greene	Verbenaceae	Tropical America-Africa	1849
<i>Phyla reptans</i> (Kunth) Greene.	Verbenaceae	Central America	1849
<i>Physalis peruviana</i> L.	Solanaceae	South America	1849
<i>Physalis pubescens</i> L.	Solanaceae	America	1849
<i>Physalis viscosa</i> L.	Solanaceae	South America	1927
<i>Picris echioides</i> L.	Asteraceae	Europe	1928
<i>Piptatherum miliaceum</i> (L.) Coss.	Poaceae	Europe	1959
<i>Pitraea cuneato-ovata</i> (Cav.) Caro	Verbenaceae	South America	1849
<i>Plantago coronopus</i> L.	Plantaginaceae	Europe	1940
<i>Plantago lanceolata</i> L.	Plantaginaceae	Europe	1910
<i>Plantago major</i> L.	Plantaginaceae	Europe	1932
<i>Pluchea absinthoides</i> (Hook. et Arn.) H. Robinson and Cuatr.	Asteraceae	South America	1848
<i>Poa annua</i> L.	Poaceae	Europe	1854
<i>Poa bulbosa</i> L.	Poaceae	Eurasia-Africa	1996
<i>Poa compressa</i> L.	Poaceae	Eurasia-Africa	1955
<i>Poa glauca</i> Vahl	Poaceae	Eurasia	1949
<i>Poa infirma</i> Kunth	Poaceae	Europe	1939
<i>Poa nemoralis</i> L.	Poaceae	Europe	1952
<i>Poa pratensis</i> L.	Poaceae	Europe	1854
<i>Poa stenantha</i> Trin.	Poaceae	America	1938

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Poa trivialis</i> L.	Poaceae	Eurasia-Africa	1924
<i>Polycarpon tetraphyllum</i> (L.) L.	Caryophyllaceae	Europe	1847
<i>Polygonum acuminatum</i> Kunth.	Polygonaceae	North America	1913
<i>Polygonum aviculare</i> L.	Polygonaceae	Asia	1851
<i>Polygonum campanulatum</i> Hook.	Polygonaceae	Asia	1990
<i>Polygonum hydropiper</i> (L.) Spach.	Polygonaceae	Europe	1960
<i>Polygonum hydropiperoides</i> Michx.	Polygonaceae	America	1851
<i>Polygonum lapathifolium</i> L.	Polygonaceae	Europe	1851
<i>Polygonum maritimum</i> L.	Polygonaceae	Eurasia	1930
<i>Polygonum orientale</i> L.	Polygonaceae	Asia	1935
<i>Polygonum persicaria</i> L.	Polygonaceae	Europe	1851
<i>Polypogon maritimus</i> Willd.	Poaceae	Eurasia-Africa	1967
<i>Polypogon monspeliensis</i> (L.) Desf.	Poaceae	Europe	1854
<i>Polypogon viridis</i> (Gouan) Breistr.	Poaceae	Europe	1927
<i>Porophyllum ruderale</i> (Jacq.) Cass.	Asteraceae	South America	2001
<i>Portulaca oleracea</i> L.	Portulacaceae	Europe	1847
<i>Potamogeton pusillus</i> L.	Potamogetonaceae	Cosmopolite	1852
<i>Potentilla anserina</i> L.	Rosaceae	Europe	1913
<i>Potentilla reptans</i> L.	Rosaceae	Eurasia	1922
<i>Prunella vulgaris</i> L.	Lamiaceae	Europe	1881
<i>Pseudognaphalium cheiranthifolium</i> (Lam.) Hillart and Burt.	Asteraceae	South America	1896
<i>Pseudognaphalium luteoalbum</i> (L.) Hilliard and Burt	Asteraceae	Europe	1848
<i>Ranunculus apiifolius</i> Pers.	Ranunculaceae	South America	1845
<i>Ranunculus arvensis</i> L.	Ranunculaceae	Europe	1989
<i>Ranunculus muricatus</i> L.	Ranunculaceae	Europe	1845
<i>Ranunculus parviflorus</i> L.	Ranunculaceae	Europe	1945
<i>Ranunculus repens</i> L.	Ranunculaceae	Europe	1875
<i>Ranunculus sceleratus</i> L.	Ranunculaceae	Europe	1969
<i>Raphanus raphanistrum</i> L.	Brassicaceae	Europe	1937
<i>Raphanus sativus</i> L.	Brassicaceae	Europe	1846
<i>Rapistrum rugosum</i> (L.) All.	Brassicaceae	Europe	1928
<i>Reseda decursiva</i> Forssk.	Resedaceae	Eurasia	1916
<i>Reseda lutea</i> L.	Resedaceae	Europe	1940
<i>Reseda odorata</i> L.	Resedaceae	Europe	1991
<i>Reseda phyteuma</i> L.	Resedaceae	Europe	1961
<i>Rhynchosia minima</i> (L.) D.C.	Fabaceae	Australia	1955
<i>Ricinus communis</i> L.	Euphorbiaceae	Central America	1851
<i>Robinia pseudoacacia</i> L.	Fabaceae	North America	1897
<i>Rorippa nasturtium-aquaticum</i> (L.) Schinz and Thell.	Brassicaceae	Europe	1846
<i>Rorippa sylvestris</i> (L.) Bess.	Brassicaceae	Europe	1933
<i>Rosa canina</i> L.	Rosaceae	Eurasia	1999
<i>Rosa rubiginosa</i> L.	Rosaceae	Europe	1875
<i>Rostraria cristata</i> (L.) Tzvelev.	Poaceae	Europe	1916
<i>Rubia tinctorum</i> L.	Rubiaceae	Europe	1900
<i>Rubus constrictus</i> Muell. et Lef.	Rosaceae	Europe	1928
<i>Rubus ulmifolius</i> Schott	Rosaceae	Europe	1897
<i>Rumex acetosa</i> L.	Polygonaceae	Europe	1993

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Rumex acetosella</i> L.	Polygonaceae	Europe	1851
<i>Rumex conglomeratus</i> Murray.	Polygonaceae	Europe	1917
<i>Rumex crispus</i> L.	Polygonaceae	Europe	1851
<i>Rumex cristatus</i> DC.	Polygonaceae	Mediterranean basin	1999
<i>Rumex longifolius</i> DC.	Polygonaceae	Europe	1932
<i>Rumex obtusifolius</i> L.	Polygonaceae	Europe	1924
<i>Rumex pulcher</i> L.	Polygonaceae	Europe	1875
<i>Rumex sanguineus</i> L.	Polygonaceae	Africa	1987
<i>Ruta chalepensis</i> L.	Rutaceae	Europe	1911
<i>Sagina apetala</i> Ard.	Caryophyllaceae	Europe	1846
<i>Sagina procumbens</i> L.	Caryophyllaceae	Europe	1924
<i>Salix babylonica</i> L.	Salicaceae	Asia	1970
<i>Salix viminalis</i> L.	Salicaceae	Eurasia	1929
<i>Salsola kali</i> L.	Chenopodiaceae	Asia Minor	1849
<i>Salvinia auriculata</i> Aubl.	Salviniaceae	Tropical America	1961
<i>Sambucus nigra</i> L.	Caprifoliaceae	Eurasia	1929
<i>Samolus valerandi</i> L.	Primulaceae	Subcosmopolite	1899
<i>Sanguisorba minor</i> Scop.	Rosaceae	Europe	1875
<i>Sapindus saponaria</i> L.	Sapindaceae	North America	1998
<i>Saponaria officinalis</i> L.	Caryophyllaceae	Europe	1881
<i>Saxifraga umbrosa</i> L.	Saxifragaceae	Europe	1932
<i>Scabiosa atropurpurea</i> L.	Dipsacaceae	Europe	1848
<i>Scandix pecten-veneris</i> L.	Apiaceae	Europe	1899
<i>Schismus arabicus</i> Nees	Poaceae	Africa	1927
<i>Schismus barbatus</i> (L.) Thell.	Poaceae	Europe	1926
<i>Schizachyrium sanguineum</i> (Retz.) Alston	Poaceae	America, Cosmopolita	1941
<i>Schkuhria pinnata</i> (Lam.) Kuntze ex Thell.	Asteraceae	South America	1895
<i>Scirpus californicus</i> (C.A.Mey.) Steud.	Cyperaceae	South America	1854
<i>Scirpus mucronatus</i> L.	Cyperaceae	Eurasia	1938
<i>Scleranthus annuus</i> L.	Caryophyllaceae	Europe	1937
<i>Scolymus hispanicus</i> L.	Asteraceae	Europe	1881
<i>Scrophularia auriculata</i> L.	Scrophulariaceae	Europe	1928
<i>Sedum acre</i> L.	Crassulaceae	Eurasia	1936
<i>Selaginella apoda</i> (L.) Fernald	Selaginellaceae	Cosmopolite	1975
<i>Senecio angulatus</i> L. fil.	Asteraceae	Africa	1919
<i>Senecio aquaticus</i> Hill.	Asteraceae	Europe	1895
<i>Senecio mikanioides</i> Otto ex Walp.	Asteraceae	Africa	1949
<i>Senecio sylvaticus</i> L.	Asteraceae	Europe	1917
<i>Senecio vulgaris</i> L.	Asteraceae	Europe	1854
<i>Senna bicapsularis</i> (L.) Roxb.	Fabaceae	America	1944
<i>Sesuvium portulacastrum</i> (L.) L.	Caryophyllaceae	America	1979
<i>Setaria adhaerens</i> (Forssk.) Chiov.	Poaceae	Europa-Africa	1987
<i>Setaria glauca</i> (L.) Beauv.	Poaceae	Europe	1982
<i>Setaria parviflora</i> (Poir.) Kerguélen.	Poaceae	America	1854
<i>Setaria pumila</i> (Poirot) Roemer and Schultes	Poaceae	Europe	1980
<i>Setaria verticillata</i> (L.) Beauv.	Poaceae	Europe	1896
<i>Setaria viridis</i> (L.)Beauv.	Poaceae	Europe	1955

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Sherardia arvensis</i> L.	Poaceae	Europe	1914
<i>Sida rhombifolia</i> L.	Malvaceae	Cosmopolite	1942
<i>Sida spinosa</i> L.	Malvaceae	Central America	1937
<i>Sigesbeckia jorullensis</i> Kunth.	Asteraceae	Central America	1903
<i>Silene armeria</i> L.	Caryophyllaceae	Europe	1881
<i>Silene gallica</i> L.	Caryophyllaceae	Europe	1846
<i>Silene vulgaris</i> (Moench.) Garcke	Caryophyllaceae	Eurasia	1933
<i>Silybum marianum</i> L.	Asteraceae	Europe	1848
<i>Sisymbrium altissimum</i> L.	Brassicaceae	Eurasia	1953
<i>Sisymbrium austriacum</i> Jacq.	Brassicaceae	Europe	1942
<i>Sisymbrium irio</i> L.	Brassicaceae	Europe	1929
<i>Sisymbrium officinale</i> (L.) Scop.	Brassicaceae	Europe	1846
<i>Sisymbrium orientale</i> L.	Brassicaceae	Europe	1929
<i>Sium latifolium</i> L.	Apiaceae	Europe	1941
<i>Solanum eleagnifolium</i> Cav.	Solanaceae	America	1849
<i>Solanum marginatum</i> L. f.	Solanaceae	Africa	1881
<i>Solanum nigrum</i> L.	Solanaceae	Europe	1849
<i>Solanum pseudocapsicum</i> L.	Solanaceae	America	1961
<i>Solanum radicans</i> L.f.	Solanaceae	South America	1920
<i>Solanum sisymbriifolium</i> Lam.	Solanaceae	South America	1923
<i>Soleirolia soleirolii</i> (Req.) Dandy.	Urticaceae	Eurasia	1926
<i>Solidago chilensis</i> Meyen	Asteraceae	South America	1848
<i>Soliva pterosperma</i> (Juss.) Less.	Asteraceae	South America	1903
<i>Soliva sessilis</i> Ruiz et Pavón	Asteraceae	South America	1848
<i>Soliva valdiviana</i> Phil.	Asteraceae	South America	1864
<i>Sonchus arvensis</i> L.	Asteraceae	Europe	1848
<i>Sonchus asper</i> (L.) Hill.	Asteraceae	Europe	1848
<i>Sonchus oleraceus</i> L.	Asteraceae	Europe	1848
<i>Sonchus tenerrimus</i> L.	Asteraceae	Europe	1864
<i>Sorghum halepense</i> (L.) Pers.	Poaceae	Africa	1924
<i>Spartium junceum</i> L.	Fabaceae	Europe	1847
<i>Spergula arvensis</i> L.	Caryophyllaceae	Europe	1895
<i>Spergularia bocconeii</i> (Scheele) Graebner	Caryophyllaceae	Europe	1930
<i>Spergularia marina</i> (L.) Besser.	Caryophyllaceae	Europe	1925
<i>Spergularia media</i> (L.) K. Presl	Caryophyllaceae	Eurasia	1912
<i>Spergularia rubra</i> Pers.	Caryophyllaceae	Europe	1846
<i>Spilanthes leiocarpa</i> DC.	Asteraceae	South America	1981
<i>Sporobolus indicus</i> (L.) R. Br.	Poaceae	Central America	1854
<i>Sporobolus virginicus</i> (L.) Kunth	Poaceae	Central America	1955
<i>Stachys arvensis</i> L.	Lamiaceae	Europe	1963
<i>Stachys grandidentata</i> Lindl.	Lamiaceae	South America	1849
<i>Stellaria media</i> (L.) Vill.	Caryophyllaceae	Europe	1846
<i>Stellaria pallida</i> (Dumort.) Piré.	Caryophyllaceae	Europe	1960
<i>Stemodia durantifolia</i> (L.) Sw.	Scrophulariaceae	America	1849
<i>Stenotaphrum secundatum</i> (Walter) Kuntze.	Poaceae	South America	1923
<i>Stipa leptostachya</i> Griseb.	Poaceae	South America	1950
<i>Stipa neesiana</i> Trinius et Ruprecht.	Poaceae	South America	1854

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Taeniatherum caput-medusae</i> (L.) Nevski.	Poaceae	Europe	1986
<i>Tanacetum parthenium</i> (L.) Schultz-Bip.	Asteraceae	Europe	1848
<i>Tanacetum vulgare</i> L.	Asteraceae	Europe	1919
<i>Tarasa tenella</i> (Cav.) Krapov.	Malvaceae	South America	1846
<i>Taraxacum officinale</i> Weber.	Asteraceae	Europe	1875
<i>Teesdalia nudicaulis</i> (L.) R.Br.	Brassicaceae	Europe	1988
<i>Teline monspessulana</i> (L.) K. Koch.	Fabaceae	Europe	1847
<i>Tetragonia tetragonoides</i> (Pall.) Kuntze	Aizoaceae	Africa	1847
<i>Thlaspi arvense</i> L.	Brassicaceae	Europe	1985
<i>Tolpis barbata</i> (L.) Gaertner.	Asteraceae	Europe	1881
<i>Torilis arvensis</i> (Huds.) Link	Apiaceae	Europe	1990
<i>Torilis nodosa</i> (L.) Gaertner.	Apiaceae	Europe	1848
<i>Tradescantia fluminensis</i> Vell.	Commelinaceae	South America	1938
<i>Tragopogon porrifolius</i> L.	Asteraceae	Europe	1881
<i>Tribulus terrestris</i> L.	Zygophyllaceae	Europe	1891
<i>Trifolium angustifolium</i> L.	Fabaceae	Europe	1974
<i>Trifolium arvense</i> L.	Fabaceae	Europe	1926
<i>Trifolium aureum</i> Pollich	Fabaceae	Europe	1936
<i>Trifolium campestre</i> Schreber.	Fabaceae	Europe	1897
<i>Trifolium dubium</i> Sibth.	Fabaceae	Europe	1897
<i>Trifolium fragiferum</i> L.	Fabaceae	Eurasia	1957
<i>Trifolium glomeratum</i> L.	Fabaceae	Europe	1922
<i>Trifolium hybridum</i> L.	Fabaceae	Europe	1971
<i>Trifolium incarnatum</i> L.	Fabaceae	Europe	1932
<i>Trifolium pratense</i> L.	Fabaceae	Europe	1920
<i>Trifolium repens</i> L.	Fabaceae	Europe	1897
<i>Trifolium striatum</i> L.	Fabaceae	Europe	1897
<i>Trifolium subterraneum</i> L.	Fabaceae	Eurasia	1974
<i>Trifolium suffocatum</i> L.	Fabaceae	Eurasia	1950
<i>Trifolium tomentosum</i> L.	Fabaceae	Europe	1948
<i>Trigonella monspeliaca</i> L.	Fabaceae	Eurasia	1951
<i>Tripleurospermum maritimum</i> (L.) Koch.	Asteraceae	Australia	1971
<i>Tripleurospermum perforatum</i> (Mérat) Laínz.	Asteraceae	Europe	1903
<i>Tropaeolum majus</i> L.	Tropaeolaceae	South America	1951
<i>Typha domingensis</i> Pers.	Thyphaceae	South America	1985
<i>Ulex europaeus</i> L.	Fabaceae	Europe	1847
<i>Urospermum picroides</i> (L.) Scop. ex F.W.	Asteraceae	Europe	1881
<i>Urtica dioica</i> L.	Urticaceae	South America	1850
<i>Urtica urens</i> L.	Urticaceae	Europe	1851
<i>Valerianella eriocarpa</i> Desv.	Valerianaceae	Eurasia	1943
<i>Valerianella locusta</i> L.	Valerianaceae	Europe	1915
<i>Valerianella ramosa</i> Bast.	Valerianaceae	Eurasia	1995
<i>Verbascum thapsus</i> L.	Scrophulariaceae	Eurasia	1881
<i>Verbascum virgatum</i> Stokes.	Scrophulariaceae	Europe	1895
<i>Verbena bonariensis</i> L.	Verbenaceae	South America	1908
<i>Verbena litoralis</i> Kunth	Verbenaceae	America	1849
<i>Verbena officinalis</i> L.	Verbenaceae	Europe	1929

TABLE 1. CONTINUED.

SPECIES	FAMILY	ORIGIN	FIRST RECORD IN CHILE
<i>Verbena rigida</i> Spreng.	Verbenaceae	South America	1987
<i>Verbesina aurita</i> Phil.	Asteraceae	South America	1881
<i>Verbesina encelioides</i> (Cav.) Benth. and Hook.	Asteraceae	America	1945
<i>Veronica anagallis-aquatica</i> L.	Scrophulariaceae	Eurasia	1895
<i>Veronica arvensis</i> L.	Scrophulariaceae	Asia	1895
<i>Veronica beccabunga</i> L.	Scrophulariaceae	Mediterranean basin	1979
<i>Veronica chamaedrys</i> L.	Scrophulariaceae	Central Europe	1929
<i>Veronica officinalis</i> L.	Scrophulariaceae	Eurasia	1932
<i>Veronica peregrina</i> L.	Scrophulariaceae	America	1994
<i>Veronica persica</i> Poiret.	Scrophulariaceae	Europe	1909
<i>Veronica scutellata</i> L.	Scrophulariaceae	Europe	1932
<i>Veronica serpyllifolia</i> L.	Scrophulariaceae	Eurasia	1895
<i>Vestia foetida</i> (R. et P.) Hoff-	Solanaceae	South America	1849
<i>Vicia benghalensis</i> L.	Fabaceae	Europe	1897
<i>Vicia hirsuta</i> (L.) Gray.	Fabaceae	Europe	1897
<i>Vicia sativa</i> L.	Fabaceae	Europe	1847
<i>Vicia tenuissima</i> (M. Bieb.) Schinz and Thell.	Fabaceae	Central Europe	1987
<i>Vicia tetrasperma</i> (L.) Schreb.	Fabaceae	Europe	1897
<i>Vicia villosa</i> Roth	Fabaceae	Europe	1897
<i>Vinca major</i> L.	Apocinaceae	Europe	1881
<i>Viola arvensis</i> Murray.	Violaceae	Europe	1943
<i>Viola odorata</i> L.	Violaceae	Eurasia	1923
<i>Viola tricolor</i> L.	Violaceae	Europe	1846
<i>Vulpia bromoides</i> (L.) Gray	Poaceae	Europe	1854
<i>Vulpia eriolepis</i> (Desv.) Blom.	Poaceae	South America	1854
<i>Vulpia muralis</i> (Kunth) Nees	Poaceae	Europe	1854
<i>Vulpia myuros</i> (L.) C.C. Gmelin.	Poaceae	Europe	1854
<i>Waltheria indica</i> L.	Sterculiaceae	America	1925
<i>Xanthium catharticum</i> Kunth.	Asteraceae	South America	1902
<i>Xanthium cavanillesii</i> Schouw	Asteraceae	South America	1848
<i>Xanthium spinosum</i> L.	Asteraceae	South America	1848
<i>Zannichellia palustris</i> L.	Zanniechelliaceae	Cosmopolite	1852

TABLE 2. Origin and number of species of alien flora in Chile.

ORIGIN	SPECIES
Europe	385
South America	115
Eurasia	60
America	44
Central America	36
Africa	27
North America	20
Asia	18
Cosmopolite	13
Australia	8
India	3
Madagascar	2
circumpolar	2
New Zeland	1
cultive	1
undetermined	1
without information	1

TABLE 3. List of families with number of genera, species and percent over total alien flora in Chile.

FAMILY	GENERA	SPECIES	%
Poaceae	69	157	21
Asteraceae	68	118	16
Fabaceae	23	63	8
Brassicaceae	23	35	5
Scrophulariaceae	14	25	3
Caryophyllaceae	15	25	3
Chenopodiaceae	5	21	3
Solanaceae	9	20	3
Polygonaceae	3	19	3
Apiaceae	14	19	3
Malvaceae	9	16	2
Cyperaceae	4	15	2
Boraginaceae	7	15	2
Lamiaceae	9	14	2
Euphorbiaceae	4	14	2
Rosaceae	6	12	2
Ranunculaceae	4	11	1
Geraniaceae	2	10	1
Other families	82	128	19

TABLE 4. Types of life-cycle and number of species of alien flora in Chile.

LIFE-CYCLE	SPECIES
annual	333
perennial	325
variable life-cycle	55
biannual	19
without information	5

TABLE 5. Growing form and number of species of alien flora in Chile.

GROWING FORM	SPECIES
herb	672
shrub	41
tree	13
climber	10
subshrub	1

ACKNOWLEDGMENTS: We would like to acknowledge financial support of the European Integrated Project ALARM: Assessing largescaleenvironmental risk for biodiversity with tested methods (GOCE-CT-2003-506675) (Settele et al. 2005).

LITERATURE CITED

Arroyo, M.T.K., C. Marticorena, O. Matthei and L. Cavieres. 2000. Plant invasions in Chile: present patterns and future predictions; p. 385-421. In H.A. Mooney and H.A. Hobbs (ed.). *Invasive Species in a Changing World*. California: Island Press.

Fuentes N., E. Ugarte and S. Klotz. 2004. Flora asociada a bordes de camino en un transecto este-oeste en la VIII región, Chile. *Boletín Musseo Nacional Historia Natural, Chile*. 53, 37-49

Fuentes N., E. Ugarte, I. Kühn and S. Klotz. 2007. Alien plants in Chile: inferring invasion periods from herbarium records. *Biological Invasions* 10: 649-657

Kühn, I., S. Klotz and R. Brandl. 2004a. Plant distribution patterns in Germany - will aliens match natives? p. 21-22. In I. Kühn and S. Klotz (ed.) *Biological invasions - challenges for science. Neobiota* 3.

Kühn I., W. Durka and S. Klotz. 2004b. BiolFlor – a new plant trait database as a tool for plant invasion ecology. *Diversity and Distributions*. 10: 363-365

Lira F., E. Ugarte and S. Klotz. 2008. A checklist of the spontaneous flora growing in Concepcion city, Chile: origin, growth habit and weed status. *Boletín Musseo Nacional Historia Natural, Chile* 57: 21-29

Marticorena C. and M. Quezada. 1985. Catálogo de la flora vascular de Chile. *Gayana Botánica* 42 (1-2): 1-158.

Matthei, O. 1995. *Manual de las malezas que crecen en Chile*. Santiago. Alfabeta Impresores. 545 p.

Sax, D.F. and S.D. Gaines. 2003. Species diversity: from global decreases to local increases. *Trends in Ecology and Evolution* 18: 561-566.

Settele J., V. Hammen, P. Hulme, U. Karlson, S. Klotz, M.Kotarac, W. Kunin, G. Marion, M. O'Connor, T. Petanidou, K. Peterson, S. Potts, H. Pritchard, P. Pyšek, M. Rounsevell, J. Spangenberg, I. Steffan-Dewenter, M. Sykes, M. Vighi, M. Zobel and I. Kühn. 2005. ALARM: Assessing LARge-scale environmental Risks for biodiversity with tested Methods. *GAIA – Ecological Perspectives for Science and Society*. 14: 69-72.

Pyšek P. 1998a. Alien and native species in Central European urban floras: a quantitative comparison. *Journal of Biogeography*. 25: 155-163.

Pyšek P. 1998b. Is there a taxonomic pattern to plant invasions? *Oikos* 82: 282-294.

Richardson, D.M., P. Pyšek, M. Rejmánek, M.G. Barbour, F.D. Panetta, and C.J. West. 2000. Naturalization and invasion of alien plants: Concepts and definitions. *Diversity and Distributions* 6:93-107.

RECEIVED: July 2010
LAST REVISED: March 2011
ACCEPTED: May 2011
PUBLISHED ONLINE: June 2011
EDITORIAL RESPONSIBILITY: Angelo Gilberto Manzatto